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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/508,809

04/07/2005

Robert George Dunster

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MERCHANT & GOULD PC  
P.O. BOX 2903  
MINNEAPOLIS, MN 55402-0903

EXAMINER

BOECKMANN, JASON J

ART UNIT

PAPER NUMBER

3752

MAIL DATE

DELIVERY MODE

04/10/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/508,809	<b>Applicant(s)</b> DUNSTER ET AL.	
	<b>Examiner</b> Jason J. Boeckmann	<b>Art Unit</b> 3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3-14, 17-22, 24-26, 30 and 31 is/are pending in the application.
- 4a) Of the above claim(s) 6, 8, 10, 11 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-5, 7, 9, 12-14, 17-19, 21, 22, 24-26, 30 and 31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/17/2008</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/17/2008 has been entered.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 4, 13, 14, 18, 25 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Zuev et al. (6,223,827).

Zuev et al. shows a fire and explosion suppression system, comprising: a source of pressurized liquid extinguishing agent (1), a source of a pressurized gas (2), mist producing means (12) connected to receive a flow of the liquid extinguishing agent at a mass flow rate thereof to produce a mist therefrom, mixing means (8) for mixing the already-produced mist into a flow of the pressurized gas to produce a discharge in the form of a two-phase mixture comprising a suspension of droplets of the mist in the

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pressurized gas, wherein the flow of the pressurized gas has a mass flow rate and the pressurized gas is pressurized by being stored under pressure which thus reduces during the flow thereof and reduces the mass flow rate of the gas, and a control means (3) including means for applying the pressure of the stored gas to pressurize the liquid extinguishing agent (7) whereby the reducing applied pressure correspondingly reduces the mass flow rate of the liquid extinguishing agent so as to control the ratio of the mass flow rate of the liquid extinguishing agent to the mass flow rate of the pressurized gas towards such a value (the set value) as to tend to produce a constant droplet size distribution in and for substantially the duration of the discharge.

Regarding claim 18, the use of the apparatus of Zuev et al. inherently performs the methods and steps of the claim.

Claims 3-5, 7, 9, 12-14, 17-19, 21, 22 and 24-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Dorkin et al. (WO99/52643) using USPN 6,478,240 for reference.

Dorkin et al. shows a fire and explosion suppression system, comprising: a source of pressurized liquid extinguishing agent (15), a source of a pressurized gas (16), a mist producing means (3) connected to receive a flow of the liquid extinguishing agent at a mass flow rate thereof to produce a mist therefrom mixing means (2) for mixing the already-produced mist into a flow of the pressurized gas to produce a discharge in the form of a two-phase mixture comprising a suspension of droplets of the mist in the pressurized gas, wherein the flow of the pressurized gas has a mass flow

rate and the pressurized gas is pressurized by being stored under pressure which thus reduces during the flow thereof and reduces the mass flow rate of the gas, and a control means (20, 18) including means for applying the pressure of the stored gas to pressurize the liquid extinguishing agent (17) whereby the reducing applied pressure correspondingly reduces the mass flow rate of the liquid extinguishing agent so as to control the ratio of the mass flow rate of the liquid extinguishing agent to the mass flow rate of the pressurized gas towards such a value (the set value) as to tend to produce a constant droplet size distribution in and for substantially the duration of the discharge, and a controllable valve (19) for adjusting the mass flow rate of the liquid agent during the discharge.

Regarding claims 3 and 9, the control means includes a means for applying the pressure of the stored gas to pressurize the liquid (17).

Regarding claim 7, the valve means comprises a controllable metering valve (20) for adjusting the valve in dependence of the mass flow rate of the gas.

Regarding claim 12, the liquid extinguishing agent flow is initiated before the gas flow (column 7, lines 40-45).

Regarding claims 17-19, 21, 22 and 24-26, the use of the apparatus of Dorkin et al inherently performs the steps and methods of the claims.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dorkin et al. (WO99/52643) using USPN 6,478,240 for reference, in view of Russwurn et al. (6,173,790).

Dorkin et al. shows all aspects of the applicant's invention as in claims 1 and 15, but does not specifically disclose that the pressurized gas is inert gas. However, Russwurn et al shows a fire-extinguishing device including pressurized gas that is inert and a liquid fire-extinguishing agent that is water. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention, under the teachings of Russwurn et al., to use inert gas in the fire suppression system of Dorkin et al., in order to extinguish a fire more quickly.

### ***Response to Arguments***

Applicant's arguments filed 1/17/2008 have been fully considered but they are not persuasive.

Regarding the applicant's arguments concerning the Zeuv et al. and Dorkin et al references, applicant argues that Zeuv et al. does not produce a constant droplet size distribution in and for substantially the duration of the discharge. The examiner respectively disagrees. It is noted that the claim only requires the constant droplet size distribution over "substantially the duration of the discharge." Since the word substantially is not specifically defined in the specification, the examiner is considering the term, "substantially the duration of the discharge," to mean; for the majority of the duration of the discharge. It appears that the apparatus of Zuev et al. is capable of producing a constant droplet size distribution for the majority of the duration of discharge (see applicant's own remarks, page 8 of the last response). The valve 3 regulates the gas pressure and the water pressure at a pressure of 6 Bar. With the gas being at an initial pressure of 300 Bar, the examiner is considering the time it will take for the gas pressure to drop from 300 Bar to less than 6 Bar to be substantially the duration of the discharge. The Dorkin et al. reference is applied to the claims in a similar manner.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason J. Boeckmann whose telephone number is

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(571)272-2708. The examiner can normally be reached on 8:00- 5:00, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571) 272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/J. J. B./

Examiner, Art Unit 3752

4/1/2008

/Len Tran/

Supervisory Patent Examiner, Art Unit 3752